

Claims

1. A safety shutdown system for controlling a fluid delivery system, the fluid delivery system including a valve for selectively closing flow between a first and second fluid vessel, and an engine for driving a fluid delivery pump, the safety

5 shutdown system comprising:

a timer activated in response to a timer activation signal for timing a countdown interval;

a timer activation input for selectively inputting the timer activation signal to the query timer for selectively enabling the query timer;

10 a wireless transmitter for selectively transmitting a timer reset signal to the timer to reset the countdown interval; and

a controller for automatically closing the valve and killing the engine if the timer times out.

15 2. A safety shutdown system as defined in Claim 1, wherein the timer activation input comprises:

at least one pair of input terminals for selectively inputting the timer activation signal.

20 3. A safety shutdown system as defined in Claim 2, wherein the timer activation signal comprises:

a current induced by electrically closing the input terminals to complete a query enabling circuit.

25 4. A safety shutdown system as defined in Claim 1, further comprising:
one or more sensors responsive to one or more selected fluid delivery characteristics to generate the timer activation signal.

30 5. A safety shutdown system as defined in Claim 4, wherein the one or more sensors are selected from the group consisting of a pressure sensor for sensing fluid pressure and a flow sensor for sensing fluid flow.

6. A safety shutdown system as defined in Claim 4, wherein the one or more sensors comprise:

5 a lever motion sensor responsive to motion of a lever on the fluid delivery system.

7. A safety shutdown system as defined in Claim 1, wherein the first fluid vessel is a tank on a vehicle, and the second fluid vessel is a tank structurally separate from the vehicle.

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8. A safety shutdown system as defined in Claim 1, further comprising: one or more function activators for activating one or more selected functions in response to a function activation signal from the wireless transmitter.

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9. A safety shutdown system as defined in Claim 8, wherein the one or more function activators are selected from the group consisting of a throttle speed activator for selectively increasing engine speed on a vehicle, a reel rewind activator for selectively rewinding fluid hose onto a reel, and an engine kill activator for selectively shutting down the vehicle engine.

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10. A safety shutdown system as defined in Claim 8, wherein the controller automatically turns off at least one of the one or more selected functions if the timer times out.

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11. A safety shutdown system as defined in Claim 8, further comprising: a set of function connection terminals for selectively connecting the one or more selected functions.

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12. A safety shutdown system as defined in Claim 1, further comprising: an alarm initiated by the controller.

13. A safety shutdown system as defined in Claim 12, wherein the alarm sounds prior to the timer timing out.

14. A safety shutdown system as defined in Claim 1, wherein the wireless transmitter transmits within a radio frequency range.

15. A safety shutdown system for controlling a fluid delivery system, the fluid delivery system including a valve for selectively closing flow between a tank on a vehicle and another tank structurally separate from the vehicle, and an engine for driving a fluid delivery pump, the safety shutdown system comprising:

a timer activated in response to a timer activation signal for timing a countdown interval;

one or more sensors responsive to one or more selected fluid delivery characteristics to generate the timer activation signal;

15 at least one pair of input terminals for selectively inputting the timer activation signal;

a wireless transmitter transmitting on a radio frequency for selectively transmitting a timer reset signal to the timer to reset the countdown interval;

20 a controller for automatically closing the valve and killing the engine if the timer times out;

an alarm for activation by the controller prior to the timer timing out; and

one or more function activators for activating one or more selected functions in response to a function activation signal from the wireless transmitter.

25 16. A safety shutdown system as defined in Claim 15, wherein the timer activation signal comprises:

a current provided by electrically closing the input terminals to complete a query enabling circuit.

17. A safety shutdown system as defined in Claim 15, wherein the one or more sensors are selected from the group consisting of a pressure sensor for sensing fluid pressure and a flow sensor for sensing fluid flow.

5 18. A safety shutdown system as defined in Claim 15, wherein the one or more function activators are selected from the group consisting of a throttle speed activator for selectively increasing engine speed on a vehicle, a reel rewind activator for selectively rewinding fluid hose onto a reel, and an engine kill activator for selectively shutting down the vehicle engine.

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19. A safety shutdown system as defined in Claim 15, further comprising: a set of function connection terminals for selectively connecting the one or more selected functions.

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20. A method of controlling a fluid delivery system, the fluid delivery system including a valve for selectively closing flow between a first and second fluid vessel, and an engine for driving a fluid delivery pump, the method comprising: providing a timer having a timer activation input; selectively inputting a timer activation signal to the timer activation input, to activate the timer and begin timing a countdown interval; selectively transmitting a timer reset signal to the timer to reset the countdown interval; and automatically closing the valve and killing the engine if the timer times out.

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25. A method as defined in Claim 20, wherein the timer activation input comprises:

at least one pair of input terminals for selectively inputting the timer activation signal.

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22. A method as defined in Claim 21, wherein inputting the timer activation signal comprises:

providing a current by electrically closing the input terminals to complete a query enabling circuit.

23. A method as defined in Claim 20, further comprising:

5 providing one or more sensors responsive to one or more selected fluid delivery characteristics; and

selectively generating the timer activation signal in response to the sensed fluid delivery characteristics.

10 24. A method as defined in Claim 20, further comprising:

providing one or more function activators for activating selected vehicle functions; and

selectively transmitting a function activation signal to activate the function activators.

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25. A method as defined in Claim 20, further comprising:

automatically turning off at least one of the one or more selected functions if the timer times out.

20 26. A method as defined in Claim 1, further comprising:

initiating an alarm prior to the timer timing out.